STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.:	MO-0113506
Owner:	EBV Explosives Environmental Company
Address:	PO Box 1386 Joplin, MO 64802
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	EBV Explosives Environmental Company
Address:	3078 County Road 180 Joplin, MO 64801
Legal Description:	NW ¼, Sec. 36, T28N, R32W, Jasper County
Latitude/Longitude:	
Receiving Stream:	Grove Creek (P)
First Classified Stream:	Grove Creek (P) (03204)
USGS Basin & Sub-watershed No.:	11070207-110003

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page Two.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

April 1, 2005 — Effective Date
November 18, 2005 — Revised

Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

April 1, 2010 — Expiration Date

Edward Galraith, Director of Staff, Clean Water Commission

FACILITY DESCRIPTION (continued)

Outfall #001 - Industry - SIC #4953
Stormwater collection/holding pond/irrigation system.
Actual Flow is dependent upon rainfall.
Design storm frequency is 10-year 24-hour storm.
Design flow is 4.25 MGD.

Outfall #002 – Domestic waste from restrooms & showers – SIC #4952
Single cell lagoon/irrigation/sludge is retained in lagoon.
Design population equivalent is 30.
Actual flow is 750 gallons per day. (dry weather)
Design flow is 0.0014 MGD. (including stormwater flows)
Design sludge production is 0.21 dry tons/year.

Outfall #002 - Stormwater Basin Irrigation System Design

The receiving stream watershed is a gaining stream setting.
The facility type is No-discharge Storage and Irrigation System for year round flows into earthen basin.
Application rate is based on irrigation of wastewater using a hydraulic loading rate.
Storage lagoon dimensions are 245 ft. x 175 ft. x 7.5 ft. depth.
Operating levels of storage lagoon are:
Freeboard of two (2) foot above the emergency spillway;
Maximum level of one (1) foot below overflow level; and
Minimum level of two (2) feet above the lagoon bottom.
Operating storage capacity between minimum and maximum operating levels is
896,388 gallons and 77 days storage including 1-in-10 year storm water flows.
Irrigation design flow is 4,250,000 gallons/year including 1-in-10 year storm water flows.
Application rates are: 0.2 inch/hour; 1.0 inch/day; 2.0 inches/week; 38 inches/year.
Irrigation site(s) are at total of 4.6 acres.
Irrigation site(s) have field slopes less than 20 percent slope.
Vegetation grown on the irrigation site is grass land.
Irrigation equipment type is sprinklers.

Outfall #001 – Domestic Wastewater Basin Irrigation System Design

Receiving Stream Watershed is a gaining stream setting.
Facility Type is No-discharge Storage and Irrigation System for year round flows into lagoon.
Application rate is based on irrigation of secondary treated wastewater using a hydraulic loading rate.
Storage lagoon dimensions: 80 ft. x 80 ft. x 6.5 ft. depth.
Operating levels of storage lagoon are:
Freeboard of two (2) foot above the emergency spillway;
Maximum level of one (1) foot below overflow level; and
Minimum level of two (2) feet above the lagoon bottom.
Operating storage capacity between minimum and maximum operating levels is 72,526 gallons and 53 days storage including 1-in-10 year storm water flows.
Irrigation design flow is 1,370 gallons/day; 500,000 gallons/year including 1-in-10 year storm water flows.
Application rates are: 0.2 inch/hour; 1.0 inch/day; 2.0 inches/week; 36 inches/year.
Irrigation site(s) are at total of 0.5 acres.
Irrigation site(s) have field slopes less than 20 percent slope.
Vegetation grown on the irrigation site is grassland.
Irrigation equipment type is sprinklers.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 – Stormwater Only (Notes 1 & 2) Emergency discharge from lagoon and irrigation sites.						
Flow	MGD	*		*	once/month*****	24 hr. total
Total Suspended Solids	mg/L	100		50	once/quarter*****	grab
Lead, Total Recoverable	mg/L	0.012		0.012	once/quarter*****	grab
Dissolved Phosphorus as P	mg/L	*		*	once/quarter*****	grab
Ammonia as N	mg/L	**		**	once/quarter*****	grab
Temperature	°F	*		*	once/quarter*****	grab
pH – Units	SU	***		***	once/quarter*****	grab
Nitrate as N	mg/L	*		*	once/quarter*****	grab
Total Nitrogen as N	mg/L	*		*	once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2005 .						
Whole Effluent Toxicity (WET) Test	% Survival	(See Special Condition #5)			once/year in year 5	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2009 .						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #002 – Sanitary Waste Lagoon – Emergency Discharge from lagoon and irrigation sites (Notes 1 & 6)						
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand$_5$****	mg/L		65	45	once/quarterly*****	grab
Total Suspended Solids****	mg/L		110	70	once/quarterly*****	grab
pH – Units	SU	***		***	once/quarterly*****	grab
Ammonia as N	mg/L	*		*	once/quarterly*****	grab
Nitrate, Nitrite as N	mg/L	*		*	once/quarterly*****	grab
Total Nitrogen as N	mg/L	(Note 5)		(Note 5)	once/quarterly*****	grab
Fecal Coliform	#/100ml	*		*	once/quarterly*****	grab
Dissolved Phosphorus as P	mg/L	*		*	once/quarterly*****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2005 .

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001 & 002 - Land Application System (Notes 3, 4, 5, & 6)						
Lagoon Freeboard	feet	*			once/month	measured
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches/ acre	*			daily	total
Rainfall	inches	*			daily	total
Total Phosphorus Applied	lbs/acre	*			once/year	total
Total Nitrogen Applied	lbs/acre	(Note 5)			once/year	total

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE January 28, 2006. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I,II & III STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** Effluent must comply with 10 CSR 20-7.031 Table B chronic General Warm Water Fishery values dependent on concurrently monitored effluent pH and temperature.

*** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units.

**** This facility is required to meet a removal efficiency of 65% or more.

***** Monitor quarterly in the months of January, April, July and October. Report as no-discharge when a discharge does not occur during the report period.

Note 1 – Does not include any process water from incinerator.

Note 2 – There shall be no discharge during normal operations up to and including the once in 10-year 24-hour storm event.

Note 3 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 4 - Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

a. Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
b. The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed; and
c. A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the application rate in inches/acre per day and for the year, the monthly and annual precipitation received at the facility and summary of testing results.

Note 5 - Wastewater that is irrigated shall be sampled at the irrigation pump or wet well and reported separately for each outfall. The annual nitrogen application for both outfalls shall not exceed 100 lbs. total nitrogen per acre per year.

Note 6 - No-discharge facility requirements. Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year 365 day rainfall or the 25-year 24-hour storm event. See Special Conditions for Land Application requirements.

C. SPECIAL CONDITIONS

1. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
   a. Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
   b. Permittee is authorized to land apply biosolids that are removed from the domestic wastewater treatment lagoon during lagoon clean-out and maintenance activities. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 90 days prior to the planned removal of biosolids from the lagoon. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

2. Best Management Practices
   a. The permittee has developed a Best Management Practices (BMP) plan to prevent or minimize the potential for, release of significant amounts of toxic or hazardous pollutants to the waters of the state through plant site runoff; spillage or leaks; sludge or waste disposal; or drainage from raw material storage. This was dated March 25, 1994. It will be updated as needed. The Water Protection Program will keep it on file.

C. SPECIAL CONDITIONS (continued)

2. Best Management Practices (continued)

b. The permittee shall review all facility components or systems (including material storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; and sludge and waste disposal areas) where toxic or hazardous pollutants are used, manufactured, stored or handled to evaluate the potential for the release of significant amounts of such pollutants to the waters of the state. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, the effects of natural phenomena such as freezing temperatures and precipitation, and the facilities' history of spills and leaks. For hazardous pollutants, the list of reportable quantities as defined in 40 CFR Part 117 may be used as a guide in determining significant amounts of releases. For toxic pollutants, the relative toxicity of the pollutant shall be considered in determining the significance of potential releases. The review shall address all substances present at the facility that are listed as toxic pollutants under Section 307(a)(1) of the Clean Water Act or as hazardous pollutants under Section 311 of the Act.

c. Whenever the potential for a significant release of toxic or hazardous pollutants to state waters is determined to be present, the permittee shall identify best management practices that have been established to minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, the permittee shall consider typical industry practices such as spill-reporting procedures, risk identification and assessment, employee training, inspections and records, preventive maintenance, good housekeeping, materials compatibility and security. In addition, the permittee may consider structural measures (such as secondary containment devices) where appropriate.

d. The BMP plan shall be documented in narrative form and shall include any necessary plot plans, drawings or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure (SPCC) plan may be used as part of the plan and may be incorporated by reference.

e. A copy of the BMP plan shall be maintained at the facility and shall be available to the Director upon request.

f. The BMP plan shall be modified whenever changes at the facility materially increase the potential for significant releases of toxic or hazardous pollutants or where actual releases indicate the plan is in adequate.

3. This permit may be reopened and modified, or alternatively revoked and reissued, to:

a. Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
   (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
   (2) controls any pollutant not limited in the permit.

b. Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.

c. Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

4. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than $\pm$ 10% from true discharge rates throughout the range of expected discharge volumes.

C. SPECIAL CONDITIONS (continued)

5. Whole Effluent Toxicity (WET) tests will be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
#001	100%	ONE PER PERMIT CYCLE IN YEAR 5*	GRAB	August 2009 (Report October 2009)

* Wet testing is required in year 5 of permit.

a. Test Schedule and Follow-Up Requirements

(1) Perform a single-dilution test in the months and at the frequency specified above. If the effluent passes the test, do not repeat the test until the next test period.
Submit test results along with complete copies of the test reports as received from the laboratory within 30 calendar days of availability to the WPP, Water Quality Monitoring and Assessment Section, P.O. Box 176, Jefferson City, MO 65102.

(2) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days, and biweekly thereafter, until one of the following conditions are met:
(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(3) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WPP, Water Quality Monitoring and Assessment Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(4) Additionally, the following shall apply upon failure of the third test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact WPP, Water Quality Monitoring and Assessment Section to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPP within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(4) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(5) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(7) All failing test results shall be reported to WPP, Water Quality Monitoring and Assessment Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(8) When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

(9) Submit a concise summary of all test results with the annual report.

b. PASS/FAIL procedure and effluent limitations:

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:
(a) the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; or,
(b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

C. SPECIAL CONDITIONS (continued)

c. Test Conditions
(1) Test Type: Acute Static non-renewal
(2) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
(3) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
(4) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
(5) Single-dilution tests will be run with:
(a) Effluent at the AEC concentration;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.
(6) Multiple-dilution tests will be run with:
(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.
(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

6. Report as no-discharge when a discharge does not occur during the report period.

7. NE and EGDN must be analyzed for in the next permit application, whether it is believed absent or not.

8. All outfalls must be marked in field and on the topographic site map submitted with the permit application.

9. Permittee will cease discharge by connection to areawide wastewater treatment system within 180 days of notice of its availability.

10. Water Quality Standards
a. Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
b. General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
(1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
(2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
(3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
(4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
(5) There shall be no significant human health hazard from incidental contact with the water;
(6) There shall be no acute toxicity to livestock or wildlife watering;
(7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
(8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

C. SPECIAL CONDITIONS (continued)

11. Annual Report (Outfalls #001 & #002)
An annual report is required in addition to the quarterly reporting under Section A of this permit. The annual report shall be submitted by January 28 of each year for the previous growing season from October 1 through September 30 or an alternate 12 month period approved by the Department and listed in the Operation and Maintenance Manual. This report shall be submitted using report forms approved by the Department and shall include a summary of the monitoring and record keeping required by the Special Conditions and Standard Conditions of this permit.

12. Wastewater Irrigation System. (Outfall #002)
a. Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
b. Irrigation Design. Design and operation shall be in accordance with 10 CSR 20-8.020(15). Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:
(1) No-Discharge System. When the Facility Description is No-Discharge , wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.
(2) Partial Irrigation System. When the Facility Description is Partial Irrigation or combined irrigation and discharge, wastewater will be irrigated when feasible and discharges are allowed as specifically authorized under the Effluent Limitations and Monitoring Requirements in Section A of this permit.
c. Lagoon Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot below the overflow point except due to exceedances of the 1-in-10 year or 25-year-24 hour storm events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30.
d. Emergency Spillway. Lagoons and earthen storage basins shall have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. The department may waive the requirement for overflow structures on small existing basins.
e. General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.
f. Saturated/Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions. There shall be no irrigation on days when more than 0.2 inch of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.
g. Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwelling; or 50 feet of the property line.
h. Public Access Restrictions. Public access shall not be allowed to the irrigation site(s). Fencing and public access restrictions to land application sites shall be in accordance with requirements in 10 CSR 20-8.020(15)(b)(5).
i. Equipment Checks during Irrigation. The irrigation system and application site shall be visually inspected at least once/hour for traveling gun or big gun irrigation systems and once/day for other systems during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.
j Nitrogen Loading Rates. Wastewater irrigation rates shall not exceed a nitrogen application rate of 100 pounds total nitrogen per acre per year. The calculation procedures are as follows: (Total N) x (0.226) x (inches per acre irrigated) = pounds total N per acre. Where Total N = [Total Kjeldahl Nitrogen (TKN) as N] + [Nitrate Nitrogen as N]. The annual report shall include testing results for wastewater, soils and crop yields and calculations for nitrogen applied and crop removal of nitrogen.

13. The emergency spillway provision in Special Condition 12(d) is waived for this permit period.

14. When the two lagoons covered by this permit are cleaned out, the sediment may be toxic due to metals accumulation. Depending on the metals concentration, this sediment may need to be landfilled.

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR,the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls